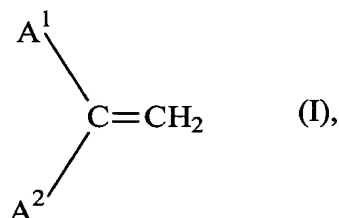


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catalyst composition and the reaction conditions are chosen such that a dimer mixture is obtained which comprises less than 10% by weight of compounds which have a structural element of the formula I (vinylidene group)



in which A¹ and A² are aliphatic hydrocarbon radicals.

6. (Amended) An olefin mixture as claimed in claim 5, which comprises a proportion of branched components greater than 85%, and an unbranched olefin proportion below 15%.

7. (Amended) An olefin mixture as claimed in claim 5, wherein predominantly groups having (y-4) and (y-5) carbon atoms are bonded to the branching sites of the main chain, where y is the number of carbon atoms in the dimerized monomer.

8. (Amended) An olefin mixture as claimed in claim 5, wherein the branched components of the dimerization mixture, in the region of 1/4 to 3/4 of the chain length of the main chain, have a branch, or two branches on adjacent carbon atoms.

9. (Amended) An olefin mixture as claimed in claim 5, wherein predominantly groups having one or two carbon atoms are bonded to the branching sites of the main chain.

10. (Amended) An olefin mixture as claimed in claim 5, wherein, in the case of the branched components, the ratio of aliphatic to olefinic hydrogen atoms is in the range

$$H_{\text{aliph.}} : H_{\text{olefin.}} = 47 : 1 \text{ to } 11 : 1.$$

11. (Amended) An olefin mixture as claimed in claim 5, wherein, in the case of the branched components, the ratio of aliphatic to olefinic hydrogen atoms is in the range

$H_{\text{aliph.}} : H_{\text{olefin.}} = 23 : 1 \text{ to } 14 : 1.$

Please add new Claims 19-26.

19. (New) An olefin mixture as claimed in claim 8, wherein the branched components of the dimerization mixture, in the region of 1/3 to 2/3 of the chain length of the main chain, have a branch, or two branches on adjacent carbon atoms.

20. (New) The olefin mixture claimed in claim 6 wherein the branched olefins comprise a proportion greater than 90%.

21. (New) The olefin mixture claimed in claim 6 wherein the unbranched olefins comprise a proportion less than 10%.

22. (New) A nonionic surfactant comprising the surfactant alcohol alkoxylation product of claim 12.

23. (New) A method for the preparation of a surfactant comprising chemically modifying the surfactant alcohol or alkoxylation product thereof of claim 12.

24. (New) A method for the preparation of alkanol glycoside and polyglycoside mixtures comprising single or multiple reaction (glycosidation, polyglycosidation) of the surfactant alcohols of claim 12 with mono-, di- or polysaccharides with the exclusion of water and with acid catalysis or with O-acetylsaccharide halides.

25. (New) A method for the preparation of surface-active sulfates comprising esterification of the surfactant alcohols and alkoxylation products thereof of claim 12 with sulfuric acid or sulfuric acid derivatives to give acidic alkyl sulfates or alkyl ether sulfates.